WHAT IS CLAIMED IS:

1. A high throughput method for screening fuel additive composition samples, under program control, comprising:

(a) providing a plurality of different fuel additive composition samples, each sample comprising at least one fuel additive;

(b) measuring the deposit formation of each sample to provide deposit formation data for each sample; and,

(c) outputting the results of step (b).

2. The method of claim 1, wherein the at least one fuel additive is selected from the group consisting of detergents, cetane improvers, octane improvers, emission reducers, antioxidants, carrier fluids, metal deactivators, lead scavengers, rust inhibitors, bacteriostatic agents, corrosion inhibitors, antistatic additives, drag reducing agents, demulsifiers, dehazers, anti-icing additives, dispersants, combustion improvers and the like and mixtures thereof.

3. The method of claim 1, wherein the at least one fuel additive is a detergent.

4. The method of claim 3, wherein the detergent is selected from the group consisting of aliphatic hydrocarbyl amines, hydrocarbyl-substituted poly(oxyalkylene) amines, hydrocarbyl-substituted succinimides, Mannich reaction products, nitro and amino aromatic esters of polyalkylphenoxyalkanols, polyalkylphenoxyaminoalkanes and mixtures thereof.

5. The method of claim 1, wherein the step of measuring the deposit formation of each sample comprises heating the sample to a predetermined temperature and determining the weight loss of the sample after a predetermined period of time.

6. The method of claim 5, wherein the predetermined temperature is from about 100°C to about 450°C and the predetermined period of time is from about 2 minutes to about 1 hour.

7. The method of claim 5, wherein the weight loss of the sample is determined by thermal gravimetric analysis.

8. The method of claim 5, wherein the step of heating the sample is conducted in the presence of air.

9. The method of claim 1, wherein the step of measuring the deposit formation of each sample comprises heating the sample to a first predetermined temperature and determining the weight loss of the sample after a first predetermined period of time and then heating the sample to a second predetermined temperature and determining the weight loss of the sample after a second predetermined period of time.

10. The method of claim 1, wherein the second predetermined temperature is higher than the first predetermined temperature.

11. The method of claim 1, wherein the fuel additive composition further comprises an inert solvent.

12. The method of claim 1, wherein a robotic assembly selectively retrieves the samples from an array of samples and individually positions the samples in a testing station for determination of the deposit formation.

13. The method of claim 12, wherein said robotic assembly is controlled by a computer.

14. The method of claim 1, wherein in step (c) the results of step (b) for each sample are transmitted to a computer, wherein the computer compares the results with a predetermined value delimiting a failure or passing of the results, and the computer identifies failed samples to preclude further testing of the failed samples.

15. The method of claim 1, wherein the step of outputting comprises storing the results of step (b) on a data carrier.

16. The method of claim 1, further comprising the step of using the results of step (b) as a basis for obtaining a result of further calculations.

17. The method of claim 1, further comprising the step of transmitting the results of step (b) to a data carrier at a remote location.

18. A high throughput method for screening fuel composition samples, under program control, comprising:

(a) providing a plurality of different fuel composition samples, each sample comprising (i) a major amount of at least one fuel and (ii) a minor amount of at least one fuel additive;

(b) measuring the deposit formation of each sample to provide deposit formation data for each sample; and,

(c) outputting the results of step (b).

19. The method of claim 18, wherein the fuel is selected from the group consisting of motor fuels, kerosene, jet fuels, marine bunker fuel, natural gas, home heating fuel and mixtures thereof.

20. The method of claim 18, wherein the motor fuels are selected form the group consisting of diesel fuel and gasoline.

21. The method of claim 18, wherein the at least one fuel additive is selected from the group consisting of detergents, cetane improvers, octane improvers, emission reducers, antioxidants, carrier fluids, metal deactivators, lead scavengers, rust inhibitors, bacteriostatic agents, corrosion inhibitors, antistatic additives, drag reducing agents, demulsifiers, dehazers, anti-icing additives, dispersants, combustion improvers and the like and mixtures thereof.

22. The method of claim 18, wherein the at least one fuel additive is a detergent.

23. The method of claim 22, wherein the detergent is selected from the group consisting of aliphatic hydrocarbyl amines, hydrocarbyl-substituted poly(oxyalkylene) amines, hydrocarbyl-substituted succinimides, Mannich reaction products, nitro and amino aromatic esters of polyalkylphenoxyalkanols, polyalkylphenoxyaminoalkanes and mixtures thereof.

24. The method of claim 18, wherein the step of measuring the deposit formation of each sample comprises heating a substrate to a predetermined temperature, contacting the substrate with the sample and determining the amount of deposits formed on the substrate after a predetermined period of time.

25. The method of claim 24, wherein the substrate is aluminum.

26. The method of claim 24, wherein the first predetermined temperature is about 100°C to about 400°C.

27. The method of claim 24, wherein the step of determining the amount of deposits formed on the substrate comprises determining the weight of the substrate containing deposits and comparing the determined weight with the weight of the substrate.

28. The method of claim 18, further comprising providing a plurality of different fuel composition samples, each sample containing at least one fuel and wherein the step of measuring the deposit formation of each sample comprises heating a substrate to a predetermined temperature, contacting the substrate with the sample containing at least one fuel for a first predetermined period of time to determine the amount of deposits formed on the substrate, subsequently contacting the substrate with at least one sample containing at least one fuel and at least one fuel additive and determining the loss of deposits formed on the substrate after a second predetermined period of time.

29. The method of claim 18, wherein the at least one fuel additive further comprises an inert solvent.

30. The method of claim 18, wherein a robotic assembly selectively retrieves the samples from an array of samples and individually positions the samples in a testing station for determination of the deposit formation.

31. The method of claim 30, wherein said robotic assembly is controlled by a computer.

32. The method of claim 18, wherein in step (c) the results of step (b) for each sample are transmitted to a computer, wherein the computer compares the results with a predetermined value delimiting a failure or passing of the results, and the computer identifies failed samples to preclude further testing of the failed samples.

33. The method of claim 18, wherein the step of outputting comprises storing the results of step (b) on a data carrier.

34. The method of claim 18, further comprising the step of using the results of step (b) as a basis for obtaining a result of further calculations.

35. The method of claim 18, further comprising the step of transmitting the results of step (b) to a data carrier at a remote location.

36. A system for screening fuel additive performance, under program control, comprising:

a) a plurality of test receptacles, each receptacle containing a different fuel additive composition sample comprising at least one fuel additive;

b) receptacle moving means for individually positioning the test receptacles in a testing station for measurement of deposit formation of the respective sample;

c) means for measuring the deposit formation of the sample in the testing station to obtain deposit formation data associated with the sample and for transferring said deposit formation data to a computer controller.

37. The system of claim 36, wherein the receptacle moving means comprises a movable carriage.

38. The system of claim 36, wherein the receptacle moving means comprises a robotic assembly having a movable arm for grasping and moving a selected individual receptacle.

39. The system of claim 36, wherein the receptacle moving means comprises means for agitating the test receptacles.

40. The system of claim 36, wherein the means for measuring the deposit formation of the sample comprises thermal gravimetric analysis.

41. The system of claim 36, wherein each test receptacle has a bar code affixed to an outer surface thereof.

42. The system of claim 41, further comprising a bar code reader.

43. The system of claim 36, wherein the at least one fuel additive is selected from the group consisting of detergents, cetane improvers, octane improvers, emission reducers, antioxidants, carrier fluids, metal deactivators, lead scavengers, rust inhibitors, bacteriostatic agents, corrosion inhibitors, antistatic additives, drag reducing agents, demulsifiers, dehazers, anti-icing additives, dispersants, combustion improvers and the like and mixtures thereof.

44. The system of claim 36, wherein the at least one fuel additive is a detergent.

45. The system of claim 36, wherein each receptacle containing a different fuel additive composition sample further comprises at least one fuel.

46. The system of claim 45, wherein the fuel is selected from the group consisting of motor fuels, kerosene, jet fuels, marine bunker fuel, natural gas, home heating fuel and mixtures thereof.

47. The system of claim 46, wherein the motor fuels are selected from the group consisting of diesel fuel and gasoline.

48. A combinatorial fuel composition library comprising a plurality of different fuel compositions, each composition comprising (a) a major amount of at least one fuel and (b) at least one fuel additive.

49. The combinatorial fuel composition library of claim 48, wherein the fuel is selected from the group consisting of motor fuels, kerosene, jet fuels, marine bunker fuel, natural gas, home heating fuel and mixtures thereof.

50. The combinatorial fuel composition library of claim 49, wherein the motor fuels are selected from the group consisting of diesel fuel and gasoline.

51. The combinatorial fuel composition library of claim 48, wherein the at least one fuel additive is selected from the group consisting of detergents, cetane improvers, octane improvers, emission reducers, antioxidants, carrier fluids, metal deactivators, lead scavengers, rust inhibitors, bacteriostatic agents, corrosion inhibitors, antistatic additives, drag reducing agents, demulsifiers, dehazers, anti-icing additives, dispersants, combustion improvers and the like and mixtures thereof.

52. The combinatorial fuel composition library of claim 48, wherein the at least one fuel additive is a detergent.

53. The combinatorial fuel composition library of claim 52, wherein the detergent is selected from the group consisting of aliphatic hydrocarbyl amines, hydrocarbyl-substituted poly(oxyalkylene) amines, hydrocarbyl-substituted succinimides, Mannich reaction products, nitro and amino aromatic esters of polyalkylphenoxyalkanols, polyalkylphenoxyaminoalkanes and mixtures thereof.

54. A method for producing a combinatorial fuel composition library comprising

(a) providing a library of a plurality of different fuel composition samples, each sample comprising (i) a major amount of at least one fuel and (ii) a minor amount of at least one fuel additive,

(b) measuring fuel composition properties of each sample to provide the fuel composition property data for each sample; and,

(c) outputting the results of step (b).

55. The method of claim 54, wherein the fuel is selected from the group consisting of motor fuels, kerosene, jet fuels, marine bunker fuel, natural gas, home heating fuel and mixtures thereof.

56. The method of claim 55, wherein the motor fuels are selected from the group consisting of diesel fuel and gasoline.

57. The method of claim 54, wherein the at least one fuel additive is selected from the group consisting of detergents, cetane improvers, octane improvers, emission reducers, antioxidants, carrier fluids, metal deactivators, lead scavengers, rust inhibitors, bacteriostatic agents, corrosion inhibitors, antistatic additives, drag reducing agents, demulsifiers, dehazers, anti-icing additives, dispersants, combustion improvers and the like and mixtures thereof.

58. The method of claim 54, wherein the at least one fuel additive is a detergent.

59. The method of claim 58, wherein the detergent is selected from the group consisting of aliphatic hydrocarbyl amines, hydrocarbyl-substituted poly(oxyalkylene) amines, hydrocarbyl-substituted succinimides, Mannich reaction products, nitro and amino aromatic esters of polyalkylphenoxyalkanols, polyalkylphenoxyaminoalkanes and mixtures thereof.

60. The method of claim 54, wherein measuring step (b) comprises a deposit formation measurement.

61. A combinatorial fuel composition library comprising fuel composition deposit formation data for a plurality of different fuel compositions, each composition comprising (a) a major amount of at least one fuel and (b) a minor amount of at least one fuel additive.